

REMARKS/ARGUMENTS

Claims 3-22 are active in the case. Reconsideration is respectfully requested.

The present invention relates to radiation curable compounds having capped amino groups.

Claim Rejection, 35 USC 112

Claims 21 and 22 have been amended so as to more consistently identify the groups of diol and polyol compounds that are mentioned in each claim. Accordingly, entry of the amendments into the record of the case is respectfully requested.

Claim Rejection, 35 USC 102

Claims 1, 3-5 and 7-18 stand rejected based on 35 USC 102(b) as anticipated by Bradford et al, U. S. Patent Publication 03/83397 as further disclosed by DE 19609617 and Sirkoch et al, U. S. Patent 4,634,602. This ground of rejection is respectfully traversed.

As applicants have previously stated on the record, the Bradford et al reference discloses a dual cure coating composition for the topcoating of surfaces to provide the same with a hardened, surface protecting coating. The coating composition is comprised of three basic components which are (a1) a radiation curable material, (a2) a thermally curable binder component and (a3) a thermally curable crosslinking component (polyisocyanate). On the other hand, the composition of the present invention does not require such a polymeric curable binder component. Moreover, in view of the scope limiting language in Claim 3, the claim does not permit the inclusion of a component which is the same as or equivalent to the thermally curable binder component (a2). Component (a2) is a mandatory constituent of the composition of the reference, because it must be present in an amount of 5 to 90 % by wt of the total nonvolatile solids of the composition [0062]. The thermally curable binder (a2)

component is essential, because it provides cured coated porous surfaces or articles which are substantially free of surface defects that are caused by vaporous emissions and which possess commercially desirable adhesion [0039]. In view of these comments, it is clear that the Bradford et al patent does not anticipate the invention as claimed.

Component (e) of the present claims also can not be viewed as equivalent to component (a2) of the reference. Although component (e) of the present claims is a compound that has at least two isocyanate-reactive groups, nevertheless, it is limited to certain diols and some polyols in Claims 21 and 22. These compounds are of low molecular weight, and therefore function as chain extenders, but not as binders. While diols are described as chain extenders in paragraph [0044] of the reference, nevertheless, the reference in paragraph [0052] requires that the (a2) component have a minimum number average molecular weight of 500, which is much greater than the molecular weight of the diols in dependent Claims 21 and 22 and also any diol that contains from 2 to 20 carbon atoms. Thus, a diol having the required molecular weight of 500 in the reference functions as a binder, and not as a chain extender. Accordingly, component (e) of the present claims is not equivalent to thermally curable binder component (a2) of the reference. Withdrawal of the rejection is respectfully requested.

In making a combination of Sirkoch et al with Bradford et al it would appear that a rejection is to be considered on the basis of 35 USC 103 rather than 35 USC 102. In fact Sirkoch et al discloses a materially different dual cure resin composition from the curable resin composition of the present invention. The patent discloses a composition which is a combination of a radiation sensitive compound having ethylenic unsaturation and having at least one urea moiety, a urethane moiety or mixture thereof with a radiation insensitive compound and a crosslinking agent that reacts with the hydroxyl groups that are present in the radiation insensitive compound. In order to prepare the radiation sensitive compound

component of the composition, a low molecular weight polyol referred to by the Examiner such as decanediol, hexanediol or the like is employed as a reactant with an organic polyisocyanate to form an isocyanate-functional polyurethane product. This compound is combined with a radiation insensitive compound and a crosslinking agent to form an embodiment of the product. Accordingly, the diols, triols and higher polyols taught by the patent are used for an entirely different purpose than as a chain extender as disclosed in the present invention. The combination of patent thus does not suggest the present invention.

Claims 1-18 stand rejected based on 35 USC 103(a) as obvious over Bradford et al, U. S. Patent Publication 2003/0083397 as further disclosed by DE 19609617 in view of Arora et al, U. S. Patent 4,912,154. This ground of rejection is respectfully traversed.

The Arora et al patent discloses a materially different polymer composition that that of Bradford et al, in that it discloses a water-reducible fatty acid substituted polyurethane that is formed by the reaction of (i) a 2-oxazoline containing adduct that has two hydroxyl groups, (ii) a diisocyanate and (iii) acid-functional compounds which contain two active hydrogen groups which are reactive with the diisocyanate. While the Examiner in paragraph 7 of the Office Action mentions that Arora et al discloses a coating system prepared by the reaction of a polyisocyanate with isocyanate-reactive compounds which include a compound having an amine-capped group, he makes no mention of the necessary acid-functional compound which must appear in the polymer product so as to provide an acid value of at least 25, preferably at least 40. The acid groups upon neutralization provide the polymer product with the desired water dispersibility. Accordingly, the acid-functional compound, which is essential to form the water dispersible polymer material of the reference, is not a reactant of the reaction mixture disclosed in Bradford et al from which a coating composition is prepared which may be in the form of an aqueous dispersion. Moreover, the acid-functional compound is not a

component of the present polyurethane as claimed. The combined references therefore do not suggest the invention as claimed.

Claim 6 stands rejected based on 35 USC 103(a) as obvious over Bradford et al, U. S. Patent Publication 2003/0083397 as further disclosed by DE 19609617 in view of Bruchmann et al, '569. This ground of rejection is respectfully traversed. This ground of rejection is respectfully traversed.

Applicants maintain their previous position as stated with respect to Claims 6. In fact, Claim 6 depends upon an independent claim that is patentably distinguished over the primary references that have been cited. Claim 6 incorporates all of the aspects of independent Claim 19. Moreover, whereas the stated requirement of component (c) of the present claims is that the compound contain at least one capped amino group and that it be used with component (b) in reaction with a diisocyanate or a polyisocyanate, the disclosure of aldimines and ketimines in column 4 of the Bruchman et al patent is in the context of a one-component polyurethane coating composition that is comprised of only reactive components having blocked isocyanate-reactive groups. Compound A of the reference is one such compound. Other reactive components that have blocked isocyanate-reactive groups include aldimines and ketimines. Thus, the Bruchman et al patent does not improve upon the primary documents and withdrawal of rejection is respectfully requested.

The Examiner in his comments on page 6 (¶ 11) of the Office Action states that Bradford et al teaches low molecular weight polyols. Where is this mentioned in the earlier paragraphs? In fact, low molecular weight polyols are taught, as mentioned in ¶ 4 of the Office Action, but these polyols are disclosed by Sirkoch et al, not Bradford et al. Moreover, while the low molecular weight polyols of Sirkoch et al are taught as a reactant with polyisocyanates that form isocyanate-functional polyurethanes, the low molecular weight

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diols of the present Claim 19 are used as polymer chain extenders, not to make isocyanate-functional polyurethanes.

Bradford et al in [¶ 56] discloses polyols such as glycols. However, these polyols also are **not** used as chain extenders, but rather are reacted with a polycarboxylic acid or anhydride thereof [¶ 55] in order to prepare the thermally curable binder component (a2). Again this does not lead one of skill in the art to the invention.

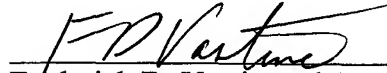
It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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